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| 09/431,365      | 11/01/1999  | CARL G DEMARCKEN     | 09765/021001        | 8582             |

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EXAMINER

PORTER, RACHEL L

ART UNIT PAPER NUMBER

3626

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/431,365

Applicant(s)

DEMARCKEN, CARL G

Examiner

Rachel L. Porter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 27-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 27-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Notice to Applicant***

1. This communication is in response to the amendments received on 12/3/03. Claims 1-8 and 27-59 are pending. Claims 9-26 have been cancelled. Claims 52-59 are newly added.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5, 52, 55 and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites "a module to define the set of diverse travel requirements by establishing a plurality of travel requirement templates," and further recites for each travel requirement template, defining a plurality of travel requirements. The current claim language seems somewhat "circular" in that the claimed module apparently defines a set of travel requirements by establishing travel requirement templates, which are defined by travel requirements (with different values). For the purpose of applying art, the Examiner will interpret this claim to mean that the requirements generator module includes travel requirement template to allow a plurality of travel requirements to be entered.

A similar analysis may be applied to claim 52, which has similar wording.

Claim 55 is indefinite because it is unclear how the present claim further limits claim 52 or what steps are being performed in the present claim. For purposes of applying art, the Examiner will interpret the claim language to mean that the travel requirement template includes multiple (i.e. a first and second) carriers.

A similar analysis may be applied to claim 59, which has similar wording.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-8 and 27-54, and 56-58 are rejected under 35 U.S.C. 102(e) as being anticipated by DeMarcken et al (USPN 6,295,521-referred to hereinafter as DeMarcken '521)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claims 1 and 2, DeMarcken'521 teaches a travel planning system comprising:

- a requirements generator module to generate a plurality of diverse travel requirements; and (col. 3, line 55-col. 4, line 62)
- a selection module to output a set of diverse travel options smaller than a candidate set of travel options by selecting from the candidate set of travel options, for each diverse travel requirement in the plurality of diverse travel requirements, one or more travel options that satisfy that travel requirement, wherein the candidate set of travel options is represented using a data structure that compactly stores the candidate set of travel options as a graph data structure (col. 4, lines 43-63; col. 5, line 25-col. 6, line 27; col. 45, lines 23-28)

As per the limitations of claim 3, see DeMarcken'521: col. 4, lines 14-41.

As per claim 4, DeMarcken'521 teaches a travel planning system further comprising:

- a travel option generator module to generate a first ordered set of travel options using a first preference function and a second ordered set of travel options using a second preference function, and (col. 5, line 26-col. 6, line 6)
- wherein the selection module to output a set of diverse travel options by selecting a first and second number of travel options from each of the first and second ordered set of travel options. (col. 4, lines 43-col. 5, line 25; col. 49, line 30-col. 50, line 39; Figure 3)

As per claim 5, DeMarcken'521 teaches the travel planning system comprising a requirements generator module with a module to generate a plurality of diverse travel

requirements (e.g. user interface) (col. 3, line 55-col. 4, line 62), that allows a plurality of travel requirements to be entered. (see 112, 2<sup>nd</sup> paragraph rejection of claim 5)

As per claim 6, DeMarcken'521 teaches the travel planning system of claim 1 wherein at least one of the travel requirements within the plurality is not a user entered travel requirement. (col. 4, lines 1-14)

As per claims 7 and 8, DeMarcken'521 teaches the travel planning system of claim 1 wherein diverse travel requirements comprise at least one of: trips on a particular carrier, non-stop travel, outbound travel departing in a predefined time period (e.g. morning, afternoon, evening or a predefined date), return trips departing in a predefined time period, non-stop travel on a predefined airline, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date. (col. 17, line 20-col. 19, line 32)

As per claim 27, DeMarcken'521 teaches the travel planning system of claim 1 wherein the compact data structure comprises a directed acyclic graph. (col. 5, line 25-col. 6, line 27)

As per claim 28, DeMarcken'521 teaches a travel planning system wherein the compact data structure comprises a grammar. (col. 45, lines 23-28)

As per claim 29, DeMarcken'521 teaches a method for generating a diverse set of travel options, the method comprising:

- receiving a candidate set of travel options based on a user input, the candidate set of travel options represented using a data structure that compactly stores the candidate set of travel options; (col. 5, line 25-col. 6, line 6)

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- enumerating a first ordered list of travel options from the data structure that are compliant with a first travel requirement; (col. 49, line 30-col. 50, line39; Figure 3)
- enumerating a second ordered list of travel options from the data structure that are compliant with a second travel requirement that represents a different value in a category identical to the first travel requirement; and (col. 15, lines 54-col. 17, line 19—categories do not have to but may have a match; col. 49, line 30-col. 50, line39; Figure 3)
- combining a first number of travel options from the first ordered list with a second number of travel options from the second ordered list to output a diverse set of travel options, smaller than a candidate set of travel options, that includes at least one travel option compliant with the first travel requirement and at least one travel option compliant with second travel requirement. (Table 2; col. 9, line 54-col. 10, line 7; col. 15, lines 54-col. 17, line 19)

As per claim 30, DeMarcken'521 teaches method of claim 29 further comprising generating the first travel requirement and the second travel requirement based on a fixed list. (col. 29, lines 4-13)

As per the limitations of claims 31-33, see DeMarcken'521. (col. 50, lines 22-38; col. 55, line 48-col. 56, line 67; Figures 8A-8C)

As per claim 34, DeMarcken'521 teaches a method wherein the data structure includes nodes that hold one or more values that can be used to provide travel options. (Figures 3A-3B)

As per the limitations of claim 35, see DeMarcken'521: col. 10, line 50-col. 11, line 67; col. 45, line 23-col. 49, line 28; col. 50, lines 22-38; col. 55, line 48-col. 56, line 67; Table 40.

As per claim 36, DeMarcken'521 teaches a method wherein enumerating a first ordered list of travel options further comprises:

- identifying children nodes for each parent node of the data structure; and (Tables 36-38)
- identifying a best solution for each node based on a best solution for each of the children nodes of the respective parent node. (col. 51, lines 4-55)

As per claim 37, DeMarcken'521 teaches the method of claim 34 wherein the data structure comprises a total number of nodes less than a total number of travel options in the candidate set of travel options. (Table 37)

As per claim 38, DeMarcken'521 teaches the method of claim 34 wherein the nodes comprise at least one of an AND node, an OR node, and a terminal node. (col. 48, line 63-col. 49, line 3)

As per the limitations of claim 39, see DeMarcken'521, Table 5.

As per claim 40, DeMarcken'521 teaches a method further comprising rendering the diverse set of travel options on an output device. (col. 4, lines 14-41)

As per claim 41, DeMarcken'521 teaches the method of claim 29 wherein at least one of the first and second travel requirements is not a user entered travel requirement. (col. 4, lines 1-14)



As per claims 42-43, DeMarcken'521 teaches the method of claim 29 wherein the category of the first and second travel requirements comprises travel on a particular carrier, number of stops during travel, outbound travel departing in a predefined time period, return travel departing in a predefined time period, non-stop travel on a particular airline, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date; and wherein the values for the predefined time comprises morning, afternoon, evening, or a predefined date (col. 3, lines 43-51; col. 17, line 20-col. 19, line 32) (It is noted that that the current claim had been amended to remove the recitation of the phrase comprising "at least one of." However, claim still includes the term "or" and thus suggests that the claim includes only one of the requirements listed before the "or" operator (e.g. outbound departing at a predefined time or date) and a return arrival on a second predefined date.

As per claim 44, DeMarcken'521 teaches a method further comprising defining a template of travel requirements. (col. 3, line 55-col. 4, line 62)

As per claims 45-46, see DeMarcken'521: col. 22, line 58-col. 23, line 10.

As per claims 47-48, DeMarcken'521 teaches a method wherein the template comprises at least one of travel on a particular carrier, non-stop travel, outbound travel departing in a predefined time period, return travel departing in a predefined time period, non-stop travel on a particular airline, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date and wherein the predefined time period comprises morning, afternoon, evening or a predefined date. (col. 17, line 20-col. 19, line 32)

As per claim 49, DeMarcken'521 teaches the method of claim 29 wherein the data structure comprises a directed acyclic graph. (col. 5, line 25-col. 6, line 27)

As per claim 50, DeMarcken'521 teaches the method of claim 29 wherein the data structure comprises a grammar. (col. 45, lines 23-28)

As per claim 51, the present claim repeats the subject matter of claim 29 as an article of manufacture encoding the instructions that cause a computer processor to perform the method of claim 29 rather than as a series of steps. As the underlying process has been shown to be fully computer enabled and disclosed by the teachings of DeMarcken'521 in the above rejection of claim 29, it is readily apparent that the DeMarcken'521 reference includes an article of manufacture encoding the instructions that cause a computer to perform the recited functions. As such, these limitations are rejected for the same reasons provided in the rejection of claim 29 and incorporated herein.

As per claim 52, DeMarcken teaches a method for generating a diverse set of travel options, the method comprising:

- determining a candidate set of travel options, the candidate set of travel options being based on user input and represented using a data structure that compactly stores the candidate set of travel options; (col. 5, line 25-col. 6, line 6)
- defining a set of diversity requirements, with defining comprising:
  - o establishing a plurality of travel requirement templates, for each travel requirement template, (col. 3, line 55-col. 4, line 62—See 112, 2<sup>nd</sup> paragraph)

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- defining a plurality of travel requirements, each of the travel requirements corresponding to a different value of the respective travel requirement template to produce the set of diversity requirements, and for each travel requirement in the set of diversity requirements, (col. 3, line 55-col. 4, line 62-see 112, 2<sup>nd</sup> paragraph)
- selecting from the candidate set of travel options a travel option that satisfies that travel requirement; (col. 3, line 55-col.5, line 35)
- combining the selected travel options for the travel requirements to generate the diverse set of travel options; and (Table 2; col. 9, line 54-col. 10, line 7; col. 15, lines 54-col. 17, line 19)
- displaying the diverse set of travel options to a user. (col. 5, line 36-col. 6, line 6)

As per claim 53, DeMarcken teaches a method wherein values for a particular travel requirement template are based on the candidate set of travel options. (col. 3, line 55-col. 5, line 32)

As per claim 54, DeMarcken teaches a method wherein the plurality of travel requirement templates include particular carriers, number of stops, outbound travel departing in a predefined time period, return travel departing in a predefined time period, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date. col. 3, lines 43-51; col. 17, line 20-col. 19, line 32)

(It is noted that that the current claim recites that the template includes a list of requirements. However, because the claim includes the term “or,” it indicates suggests that the claim includes only one of the requirements listed before the “or” operator (e.g.

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outbound departing at a predefined time or date) and a return arrival on a second predefined date.

As per claim 56, the present claim repeats the subject matter of claim 29 as an article of manufacture encoding the instructions that cause a computer processor to perform the method of claim 52 rather than as a series of steps. As the underlying process has been shown to be fully computer enabled and disclosed by the teachings of DeMarcken'521 in the above rejection of claim 52, it is readily apparent that the DeMarcken'521 reference includes an article of manufacture encoding the instructions that cause a computer to perform the recited functions. As such, these limitations are rejected for the same reasons provided in the rejection of claim 52 and incorporated herein.

As per claim 57, DeMarcken teaches the article of claim 56 wherein values for a particular travel requirement template are based on the candidate set of travel options. (col. 3, line 55-col. 5, line 32)

As per claim 58, the limitations of the present claim are addressed by the rejections of claims 54 and 56, and incorporated herein.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 55 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarcken in view of Iyengar et al (USPN 6,360,205).

As per claim 55, DeMarcken teaches a method including a travel requirements template to allow a plurality of requirements to be entered (col. 3, line 55-col. 4, line 62), but does not expressly disclose that that the travel requirement template includes multiple (i.e. a first and second) carriers. Iyengar teaches a system/method wherein a travel requirements template includes a plurality of carriers. (Figures 6-10; col. 3, lines 19-26; col. 4, lines 26-36) At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to modify the method of DeMarcken with the teaching of Iyengar to include a plurality of carriers on the travel requirements template. As suggested by Iyengar, one would have been motivated to include this feature to facilitate consumer access to the best prices (col. 2, lines 49-59) and to allow consumers to make meaningful comparisons among a number of travel service data sources (col. 4, lines 26-35).

As per claim 59, the limitations of the present claim are addressed by the rejection of claims 55 and 56, and incorporated herein.

### ***Response to Arguments***

8. Applicant's arguments filed 12/3/03 have been fully considered but they are not persuasive.

On pages 12-13, the Applicant apparently argues the newly added limitations of the amended claims 1-8 and 27-51. Namely, the Applicant argues that the DeMarcken reference fails to disclose the “diverse travel requirements” and “diverse travel options.”

In response, the new limitations added to the claims have been addressed in the new art rejections provided in the present Office Action. Moreover, while several of the claims have been amended to recite the term “diverse,” it is respectfully submitted the addition of this term to the claim(s), by itself, fails to provide a patentable distinction over the travel options/requirements in the DeMarcken reference.

It is apparent that the Applicant intends particular definitions with the recitation of the terms “diverse” or diversity in the current claim language and/or arguments. However, the Applicant does not point out and the Examiner was unable to find definitions of these terms in the current claim language or in the originally filed disclosure to support a narrow interpretation of the terms “diverse” or “diversity.” In the absence of such definitions, the Examiner must give the claim language the broadest reasonable interpretation. The Examiner understands the term “diverse” to include any difference in the travel options output by the system or input by the user (i.e. time that information was obtained, selected carrier that provides a service, points of origin or destination, numbers of intermediary stops). If the Applicant intends to limit the interpretation of the term, then the claim language should reflect such limitations. Alternatively, the Applicant should specify portions of the originally filed disclosure, which clearly define the term. It should be noted that non-committal or exemplary

language in the specification (e.g. "diverse options or requirements may include...") does not provide a clear definition of a term.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel L. Porter whose telephone number is 703-305-0108. The examiner can normally be reached on M-F, 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on (703)305-9588. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1113.

RP

RP

February 23, 2004

*Joseph Thomas*  
JOSEPH THOMAS  
SUPERVISORY PATENT EXAMINER  
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